



# Economic Development and Technology Transfer

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## Economic Development Appropriations & Economic Growth February 1, 2007

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Business and Community Services

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Office of Sponsored Programs

# Today's Presentation

- **UNI's Economic Development Outcomes**
- **Grow Iowa Values Fund Updates**
- **Business Partnership Presentation**
- **Rural Entrepreneurship Presentation**
- **NABL Presentation**
- **State Supported Economic Development Programs**
- **Battelle Projects**
- **Creation of UNI's Public Campus**



# UNI Economic Development

## Economic Development Contributions - 2006

- **2,900** Businesses and Organizations Assisted
  - **4,000** Active Business Clients
- **35** New Community Partners Assisted in Local Development Efforts
  - **450** Communities Assisted
- **260** Environmental On-site Reviews
  - **3,100** On-Site Reviews

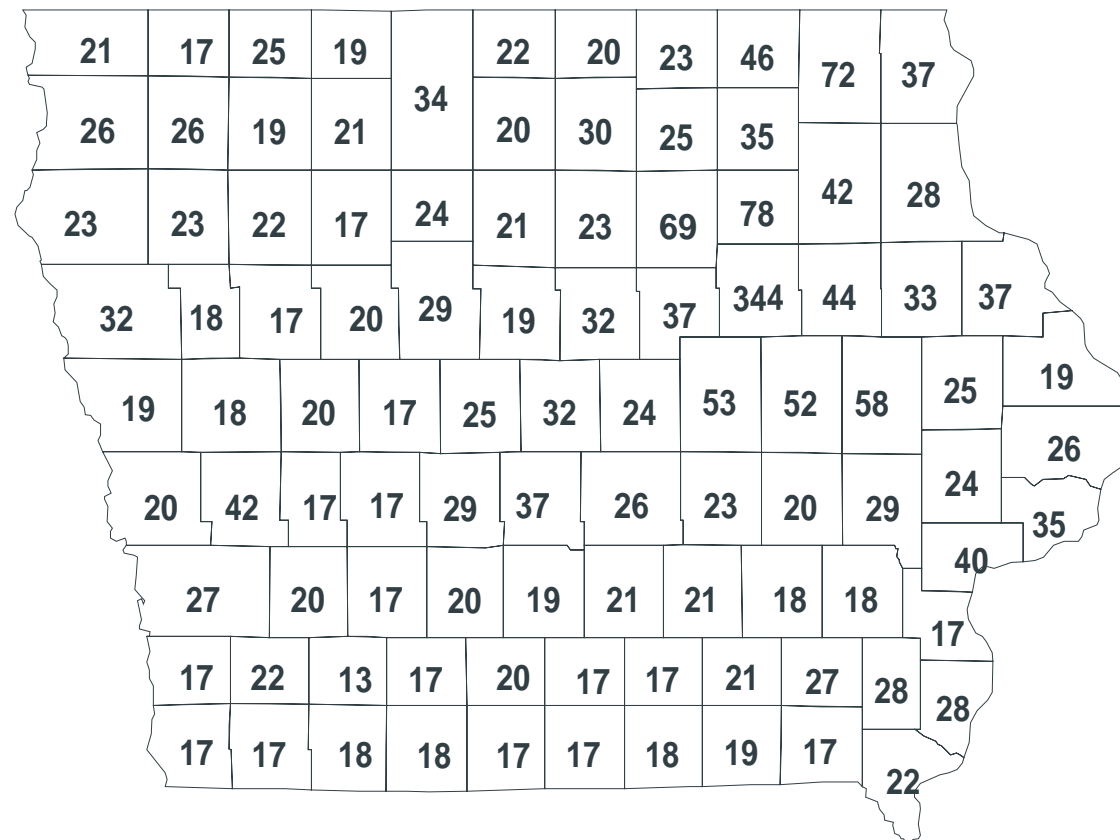
# UNI Economic Development

## Economic Development Contributions (continued)

- **49** New or Expanded Businesses - MyEntreNet
- **85** Training Workshops for **1,400** Business Professionals in FY 2006
- **140** Faculty and **1,450** Students Participated in Outreach Activities
- Each State Dollar Invested Leveraged **\$6** in Federal Grants and Private Sources
- Active Projects in All **99** Counties



# BCS Clients by County 2006



FY 2006

# **Grow Iowa Values Fund**

## **Five Projects at UNI - \$950,000**

- **Technology Transfer and Business Incubation - \$310,000**
- **Rural Entrepreneurship - \$200,000**
- **Market Research - \$110,000**
- **Regional Development - \$130,000**
- **National Ag-based Lubricants - \$200,000**



## **Technology Transfer & Business Incubation**

- **Full-time IPO**
- **Revised IP Process**
- **11 Disclosures in 2006**
- **12 Disclosures -1<sup>st</sup> Half of 2007**
- **Director of Technology Transfer and Business Incubation**
- **Applied Research Program**

## **Applied Research Projects**

- **Pressure-equalizing Insert for Leg Prostheses**
- **Dual Stage Phenolic Urethane Cold Box Process**
- **Nanoscale Surface Profiling by Laser Interferometry**
- **Low-cost Microcontroller-based Data Acquisition System for Machine Condition Monitoring**
- **Robotics-Deployed Detection of Biological Agents**



# Brief Project Presentation

**Mr. Dennis Clark – Clark & Associates**

**Dr. Cliff Chancey, Dept. Head – Physics**

- **Pressure-equalizing Insert for Leg Prosthesis**





# Grow Iowa Values Fund

## A Rural Entrepreneurship Development System

Maureen Collins-Williams  
UNI Regional Business Center/SBDC





## ***A Different Approach***

### ***Regional Focus***

MyEntreNet provides a comprehensive, holistic approach to entrepreneurial development

### ***Advanced interactive web technologies***

MyEntreNet uses individually personalized, advanced technologies to link geographically isolated entrepreneurs with service providers, e-learning, and the global economy.

### ***Partners with existing service providers statewide***

MyEntreNet makes good use of our scarce state resources by partnering with existing Iowa service providers to serve rural regions, resulting in a sustainable, locally driven system.



## *Community Empowerment* **Rural Leadership Charting their Own Direction**

**Create a Supportive Culture**

**Foster Innovative Thinking**

**Provide Tools and Resources**

**Connect Decision Makers**





## *Business Assistance*

# **Statewide Service Providers Partnering in Rural Iowa**



Fast Trac® Training  
Topical Workshops



*Clayton County Fast Trac® Class, Fall 2005*



*Capitalization*  
**Matching Entrepreneurs with Funding**

*Chip/Darlene Schwickerath*  
*New Hampton \$250,000*



*Sara Sheets, Independence*  
*\$25,000*



*Soy Basics*  
*New Hampton*  
*\$1.2 million*



## Networking

# Iowa's Online Community for Entrepreneurs



Chickasaw County, Iowa  
*Navigate your Future*



Welcome to MyEntreNet  
**Mike Hahn** [Edit Profile](#) | [Log Out](#)



Grocery/Bakery Research

### Chickasaw County

- ▶ Ethanol Plant Ground Breaking
- ▶ 0% Financing Christmas Cash
- ▶ Magical Moments in New Hampton
- ▶ [View all Chickasaw County News](#)

### Business Resources

- ▶ Grocery/Bakery Research
- ▶ Choosing a Retail Location: Factors to be Considered (Part 1 of 2)
- ▶ Choosing a Retail Location: Shopping Centers (part 2 of 2)
- ▶ Tobacco Law Affects Minors and

## Chat Features

COUNSELOR CHAT



CHAT with PEERS  
0 Peer(s) in Lobby

HOSTED CHAT SESSIONS  
10/14 8:00pm Miriam Dunlap - Atherton House

MyEntreChat!  
[coming soon]

### Navigation Tools

- [Home Page](#)
- [Chickasaw County News](#)
- [Business Research](#)
- [Business Links](#)
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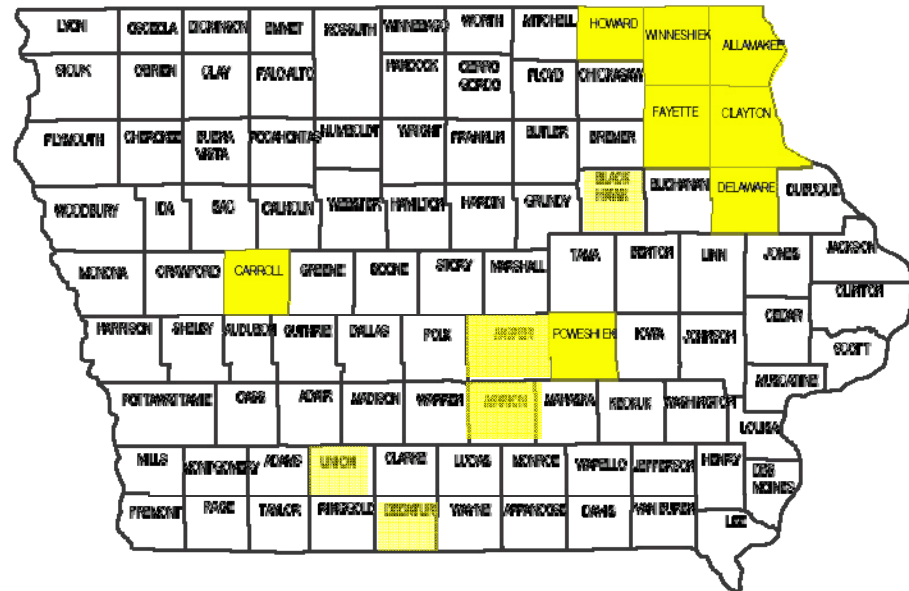
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## 13 MyEntreNet Counties as of January 2007

**Allamakee  
Howard  
Winneshiek  
Clayton  
Union\*\*  
Marion  
Decatur**

**Carroll  
Poweshiek  
Fayette  
Delaware  
Jasper\*\*  
\*Black Hawk**



**\*2006 urban region MyEntreNet beta test**

**\*\*New 2007 MyEntreNet regions**



## Economic Impact To Date

**Since Inception....**

**538 Entrepreneurs have been served with  
baseline services**

**Starting or Expanding...**

**96 Businesses**

**Creating...**

**279 New Full Time Jobs**

**Leveraging...**

**\$11,797,000 in New Commercial Investment**



## 2006 Economic Impact

**Between January and December 2006....**

**194 Entrepreneurs have been served with  
baseline services.**

**Starting or Expanding...**

**49 Businesses**

**Creating...**

**111 New Full Time Jobs**

**Leveraging...**

**\$4,286,000 in New Commercial Investment**



# **Grow Iowa Values Fund**

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## **Market Research**

- **8 Market Research Projects with Iowa Companies**
- **8 Market Research Plans/Assessments**
- **6 Phase I Market Research - UNI Tech Transfer**
- **Increased Sales & Employment**

# **Grow Iowa Values Fund**

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## **Capacity Building for Regions**

- **8 Regions Assisted**
- **53 Counties Included**
- **Varied Projects**
- **Primary Focus Toward Raising Capacity and Sustainability**

## National Ag-Based Lubricants Center (NABL)

Dr. Lou Honary, Director

- **Biobased Lubricants and Fuel Testing Capabilities**



## History

- **1991 – Formed as a Research Project**
- **1995 – Expanded into Ag-Based industrial Lubricants (ABIL) Research Program**
- **2006 – Expanded into National Ag-Based lubricants (NABL) Center**

## Mission

**To provide a national focus for research and technology transfer activities that creates and nurtures the commercialization of biobased lubricants which will expand market opportunities for the agricultural community, minimize environmental impact, and help the United States become more energy independent.**



# **UNI-NABL History: 1996-2001**

**Developed over 30 Lubricants and Greases, 9  
patents, and numerous publications**

**Hydraulic Oils – 5 products**

**Greases – 7 products**

**Metalworking Fluids – 7 products**

**Chain Bar Lubricants – 2 products**

**Transformer cooling oils – 1 product**

**Solid Lubricants – 1 product**

**Wood preservatives – 1**

**Other -- 6**



## **UNI-NABL**

- **Through DOE grants, a \$5 million expansion of testing capabilities is underway**
- **NABL will serve the interest of the biobased industry nationwide**
- **NABL will be an important part of the national infrastructure for biobased economic development**
- **NABL will continue to be an advocate for the use of biobased products**
- **Matching funds will be used to double DOE funding**



# NABL Testing Capabilities

## Full Line of Analytical Testing Capabilities



# NABL Testing Capabilities

## Full line of Tribology (friction and wear) Testing Capabilities



# NABL Testing Capabilities

## Full line of Fluid Testing Equipment





# NABL Testing Capabilities

## Biodiesel Testing Equipment



# NABL Testing Capabilities

## Pump Performance Testing





# NABL Testing Capabilities

## ASTM D6751 Biodiesel Test Series

Biodiesel, which is esterified materials made from vegetable oils, animal fats, and other sources; is required to meet the quality parameters set forth in the **ASTM D6751 test series**.

.Flash Point \* (closed cup) — ASTM D93

.Carbon Residue \* — ASTM D4530

.Water and Sediment \* — ASTM D2709

.Acid Number \* — ASTM D664

.Kinematic Viscosity \*, 40 Degrees C — ASTM D445

.Free Glycerin \* — ASTM D6584

.Sulfated Ash — ASTM D874

.Total Glycerin \* — ASTM D6584

.Sulfur — ASTM D2622

.Phosphorus Content \* — ASTM D4951

.Copper Strip Corrosion \* — ASTM D130

.Cetane Number — ASTM D613

.Distillation Temperature \*, Atmospheric Equivalent Temp., 90% recovered — ASTM D1160

.Cloud Point \* — ASTM D2500

\* Equipment already available at NABL

## Summary

- **NABL is expanding its testing capabilities to serve biobased economy**
- **NABL will be an important part of the national infrastructure for biobased economic development**
- **State or private funding is needed to acquire equipment for biodiesel testing and will be matched \$ for \$ with DOE funds.**
- **With appropriate additional funds and with DOE matching funds, NABL should be able to provide full biodiesel testing according to ASTM D6751 within 12 weeks.**

# **Update on Biodiesel and Ethanol Projects**

- **NABL has performed preliminary investigation into the use of byproducts from ethanol production (residual corn oil from DDG) and glycerin from biodiesel processing**
- **ELM is exploring value added lubricants from of these byproducts**
- **Due to excess supply, byproduct glycerin is sold as low as \$.02/lb. NABL research has shown that if glycerin is viable for use in greases, it could be sold at \$.15 - \$.20/lb**
- **Similarly, corn oil residuals tested at NABL have shown properties suitable for many industrial lubricants with value equal to crude soybean oil prices of \$.25 -\$.30/lb**
- **Once the project is completed, the results will be shared with industry**





# Programs Receiving State Economic Development Appropriations

- **Institute of Decision Making**
- **Metal Casting Center**
- **(SBDC-through ISU)**



## **Institute for Decision Making**

- **Hands-on assistance for local development groups for 19 years**
- **35 new partners and 450 communities served**
- **Provide important economic development services**
  - Economic development planning, targeting, and marketing
  - Regional development and collaboration
  - Economic impact analysis
  - Linkage to clusters and other applied research
  - Community empowerment



## **Innovative Partnerships**

- **IDED – LOIS Data**
- **IDED – Business Retention and Expansion**
- **IWD – Laborshed Model Updates**
- **IWD – Cluster Analysis**
- **Utilities – Economic Impact**



## **Institute for Decision Making**

### **Demand for Technical Assistance and Expertise**

- **Capacity Building at Local/Regional Level**
- **Applied Research for Local Initiatives**
- **Participation in State's Targeted Clusters**
- **Sustaining Functional Regions**
- **Entrepreneurs in Local Development**

# Metal Casting Center

- **Assistance to Iowa Foundries**
  - Testing, research and training
  - Increased productivity for metal casting industry (reducing foundry wastes, process efficiencies)
- **Center for Advanced Biobased Binders**
- **Industry Partners**
  - 32 Iowa foundries
  - Assist foundry suppliers
  - Primary castings training facility in Midwest
  - Provide graduates for casting industry



## **Metal Casting Center Key Initiatives**

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- **Biobased Binder project (CABB)**
- **Industry Partnerships – Innovation**
- **National Training Center**
- **Partner in Cedar Valley Tech Works**



# **UNI Battelle Funding FY 2007**

- **Faculty Salaries - \$1 million (20%)**
  - 17 Faculty Projects
- **Infrastructure - \$1.36 million (20%)**
- **Research Projects - \$820,000 (10%)**



# UNI Battelle Funding Infrastructure Projects

## ■ Renovations

- **Greenhouse Research Laboratory – construction has begun**
- **Hop Genetic Engineering Research Laboratory – 90% complete**
- **Bioinformatics and Proteomics Laboratory – construction will begin soon**





# **UNI Battelle Funding Infrastructure Projects**

## **■ Equipment**

- Nanoscience Research Laboratory – by end of spring**
- Commercial Computing Grid – computer cluster is built**
- Bio-based Metal Working Fluid Research Laboratory – by March 2007**

# Battelle-Related Research Projects

## Bioeconomy

- **Ethanol & Biodiesel Byproducts as Base Oils for Biobased Industrial Lubricants**
- **Development & Commercialization of a Foundry binder System Based on Polysaccharide Bio-feed Stock**



# Battelle-Related Research projects

## Biosecurity

- **Robotics-Deployed Detection of Biological Agents**



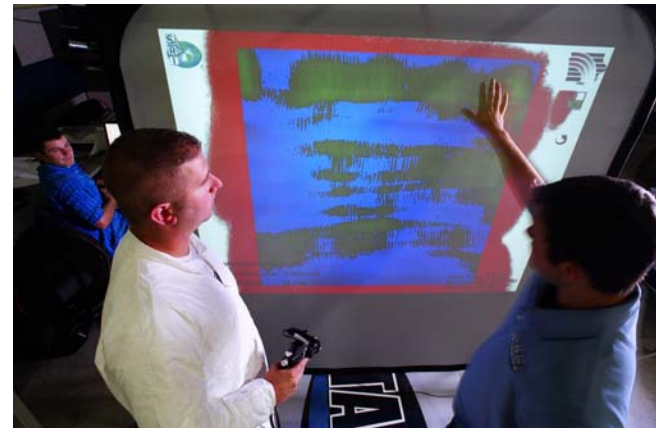
# Battelle-Related Research Projects

## Information Solutions

- Commercializing Computer Grids

## Advanced Manufacturing

- Commercialization of Leading Edge Paint Removal Technologies





# **Battelle-Related Research Projects**

## **Post Genomic Medicine**

- **Commercialization of Protein Structure Prediction Technology**

## **Advanced Food and Feed**

- **Identifying Drought Tolerance Genes in the Reproductive Structures of Barley**

# UNI Contributions

## Creation of a Public Campus

- **Business and Community Services Building**
- **Innovation Accelerator**
- **Student Incubator**
- **BCS Programs**



**Opens in Spring 2007**



## Economic Development Contact Information

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- [www.bcs.uni.edu](http://www.bcs.uni.edu)
- 1-800-782-9520

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